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A potentially hazardous shift in the orthodontic continuing education model: A crowd queuing up to educate us

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A definitive shift in dental continuing education has occurred in the past decade, and it is apparent now in most physical or virtual dental conferences and seminars. During the last decade, dental and orthodontic continuing education have been characterized by the emergence and increasing prominence of the following:

(1)
A plethora of scientific societies organized and run by practitioners who seem to have realized that a study club "stretched" to become a scientific society could be profitable;

(2)
A huge number of industry-associated or sponsored conferences, groups, and networks;

(3)
New technology-boosted blogs and privately owned Web pages, which provide the opinion of the owner of the site on a wide range of topics;

(4)
"Journals" in the form of bulletins, owned and managed by the industry; and

(5)

technologic advancements such as digital dentistry, which have been exaggerated to receive the characteristics of a scientific field and at the same time, play a significant role in the dissemination of information.

The foregoing list is not exhaustive because, depending on the specialty characteristics, other parameters may be implicated in the development of an environment and is indicative of a vastly increased number of scientific events organized by a large number of diverse sources.

Interestingly, this trend is limited to dental specialties such as implant, prosthetic and restorative dentistry, and orthodontics, in contrast to the corresponding basic dental research sections (oral biology) or disciplines such as oral pathology and dental public health. Therefore, one should be quite puzzled from the discrepancy in the level of enthusiasm for the pursuit of spreading knowledge between conference organizers of specialties, which involves a great deal of materials and devices, where an abundance of offered courses is noted, and other fields, which carry less financial interest by the industry, where no major changes have been noted with this respect.

The purposes of this article are to provide an overview of the conditions that allowed the flourishing of this continuing education trend, define the reasons that led to the establishment of nonconventional continuing education sources, initially as alternative and currently as mainstream information providers for dental specialists, and highlight the risks associated with their integration as a reliable source of education.

The “democratization’’ of scientific information dissemination: more does not always mean better

The fundamental principal behind the notable expansion in size and the increase in the number of ‘’societies,’’ groups privately owned, clinical associations, and firms organizing dental and orthodontic conferences and Webinars is based on the assumption that widespread handling of scientific information is beneficial for the user. An argument for this is that the multiplicity of approaches associated with the presence of more scientific providers leads to a better overview offered to the audience. However, there are 3 reasons why this is erroneous:

(1)

The financial interest of the governors of alternative, newly emerged societies, board members of firms, or managers of networks or blogs

In this case, the organizers or the invited speakers may maintain a consulting role in the industry, and therefore, the presentation of the efficiency of a new material/device/technique serves the marketing needs of the firm. This advertisement-type conference features speakers who have limited or no previous work in the topic as evidenced by the publication of original work in PubMed-listed journals. In contrast to specialists with experience in clinical research and evidence-based practice management, the typical presenter in these groups has the profile of a "clinician,'' with the term defining a spectrum of engagement limited to a subjectively defined, untested experience confined within his/her practice and presenting a selection of patients' data. Orthodontics has had a number of cases in which heavily advertised and speaker-promoted products fell short of the claims made by the industry and its associated circles of speakers. In the words of a prominent figure of orthodontic education, "manufacturers have a legal responsibility to their stakeholders and not the orthodontist."[1]

The situation is further complicated by the fact that the target of manufacturers' advertisements has expanded beyond the group of practicing professionals and has grown to have a direct consumer reach, which is a unique feature in the broader health care sector. The equivalent scenario in clinical medicine would be, for example, a patient requiring a knee replacement, who approaches an orthopedic surgeon to inquire about the type and brand of prosthesis he/she plans to place, quoting specific industry claims about the superiority of a given product. Yet, in our field, this has already been the case with specific self-ligating bracket and aligner brands.

The foregoing issues, along with the practice of many orthodontic associations to provide courses free of charge to their members by inviting industry-paid speakers, have closed the circuit of the influential role of the industry on clinical practice trends. This includes the following: advertisement to professionals, support of the continuing education program of recognized scientific societies through industry-sponsored speakers, organization of own conferences, and publication of own periodicals, and direct consumer reach through advertisement to the public.

With these means, the industry can advertise a new material, device, or technique; organize pseudo-scientific conferences with speakers belonging to its circles of consultants or key opinion leaders (key opinion leaders—influencers)[2] or populate the programs of conferences organized by other societies with key opinion leaders of its choice featured as speakers and publish articles in pseudo-scientific journals or predatory periodicals.[3] The armamentaria available for promoting a new material, device, or technique covers all possible information sources available to practicing orthodontists.

As with the case of the industry, individually run networks and blogs may also be problematic with respect to clearly identifying the level of support by unknown sources. The origin of the support of these sites is unclear because the standard jargon used with respect to the conflict of interest is "the site is run though donations." This can be interpreted ad lib because the industry can infiltrate these networks through open support or masked sponsoring under a donation made by an organization or a person. Moreover, the origin of donations is not disclosed, and this lack of transparency for a party, which operates outside of the mainstream sources of scientific information dissemination, is something that needs to be considered. Handling of the scientific information in these sites can be influenced by prejudice, financial interest, or level of knowledge of the individual who manages these sites.

(2)

Conflict of interest of organizers

Apart from financial interest, nonfinancial interest–related bias can also obscure the process of deriving valid information from these education sources.[4] The paradigm of acceleration of tooth movement and the inferences made on the total treatment duration based on sections of treatment is typical of this fallacy.

(3)

Level of treatise of the subject

The problem with the multiplicity of sources organizing continuing education events lies also in the ability of organizers to grasp the actual necessity of providing hard evidence for the proposals made. In the minds of many practitioners, research experience and skills are features required in academia, whereas clinical questions can

be solved by clinicians on the basis of their "experience." Therefore, it comes naturally that when this category of professionals formulates conference programs, the scope of the conference themes reflects their mentality toward problem-solving in dentistry. This revival of a concept that prevailed at the dawn of our specialty and has been proven obsolete already decades ago does not help advance the specialty. Deprivation of the clinical practice from its academic/research component and a lack of a solid background in science may be detrimental to the level of services provided to the patient.[5] This is because the absence of any research experience leads to the situation in which the clinician is unaware of the limitations of research methodologic approaches, accepting indiscriminately the claims of the sales representatives and conference presentations on brackets, wires, appliances, and acceleration devices, to name a few. This results in endorsing the advertised claims made on various issues, such as treatment duration with specific appliances, efficiency of devices in treating malocclusions, resulting from the use of appliances, inertly. In the era of evidence-based health sciences practice, this may have unfavorable consequences for the patients under treatment.

From another perspective, the review of the current orthodontic literature indicates an increased interface of orthodontic research with scientific fields related to biomedical engineering, biologic sciences, and epidemiology.[6] Assessing the available information is a daunting task for an individual who limits his or her engagement with these issues to a practical application of a material, a device, or a technique to patients. Deriving conclusions on the efficiency of treatment modes and materials requires knowledge across a range of disciplines, and therefore, what the clinician sees in conferences presented as an efficient solution could just be a misconception from the side of the presenter, biased judgment in the presence of an obvious conflict of interest, or unsubstantiated proposal based simply on a case series analysis.

The role of new technology in efficiently reaching out to a bigger crowd

The parameters analyzed in the foregoing section are primarily the result of the adoption of new technologic advances in communicating the information to professionals. Therefore, the digitalization of correspondence and the formulation of

databases with characteristics of the status (postgraduate student, clinician, specialty), along with the analysis of preferences of topics of the prospective audience, have greatly boosted what is termed independent conference organization. Some of the groups take the situation a step further, forming ‘’academies’’ and issuing fellowships and memberships along with prizes of merit to their members. Therefore, the emerging digital dental world has been both a topic of continuing education and a tool for conference organization. With the assistance of metrics, the professional interests of clinicians are recorded, and the organizers formulate a target group, advertise it by listing the information on social media platforms, or run Webinars.

Because scientific and clinical advances in health care have never been solely based on aggressive marketing without the proper substantiation by independent studies, the importance of engaging researchers and academics additionally to practicing professionals and sticking to the traditional route of peer review process cannot be stressed enough. Currently, the latter constitutes the only way to evaluate what could, at first glance, be an attractive new treatment mode or appliance for the treatment of malocclusions. This holds true particularly when the proposed scientific/clinical advancements are confined within the environment of presentations in continuing education courses, evading the peer review process in a recognized journal.

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